Tennessee National Wildlife Refuge

Improving Waterfowl Habitat On The Big Sandy Unit - A Study

Background

In 1989 citizens in the vicinity of the Big Sandy Unit of Tennessee National Wildlife Refuge expressed concern that the refuge was increasing waterfowl management efforts on the Duck River Unit while decreasing management efforts on the Big Sandy Unit. They contended that this had resulted in the waterfowl population decreasing on the Big Sandy Unit and increasing on the Duck River Unit. They asked the Fish and Wildlife Service (Service) to increase the food resources available to waterfowl on the Big Sandy Unit in order to provide an adequate and consistent food base for historic waterfowl population levels. A committee of Service representatives was formed to consider the requests made by the public and, if appropriate, to develop recommendations for increased management efforts on the Big Sandy Unit. Among other things, the committee recommended that 100 acres of unharvested corn be made available to waterfowl each year and that all harvested crops be over-seeded with winter wheat. These recommendations were implemented in 1990 and continued through 1992 for the 3 year study period..

As a member of the committee selected to evaluate the Big Sandy Unit waterfowl management program, I summarized 1960-89 historic January Midwinter Survey results for the Big Sandy Unit, Duck River Unit and the Busseltown Unit. January Midwinter Survey data were used since periodic count data for individual refuge units were not available from the refuge. From 1960-89 the data did support the public's contention that the Big Sandy Unit's proportion of the total refuge population had decreased for both ducks (Figure1, Table 1) and geese (Figure 2, Table 2) The average number of ducks had also declined substantially but the number of geese had not varied greatly. The 1960-89 data were presented at one of the public hearings held on this issue.

Results

Since 1989, the January Midwinter Survey data indicate that the proportion of both ducks and geese occurring on the Big Sandy Unit has increased substantially. The number of ducks occurring on the Big Sandy Unit has increased to near the early 1960's level of around 50,000. Were the 1989 Service objectives for the Big Sandy Unit achieved? I would say yes, since the proportion of both ducks and geese on this unit appear to have increased to near the 1960-64 level. It would be interesting to see if refuge periodic population survey data since 1989 support the conclusions drawn from the January Midwinter Survey data.

Discussion

It is of concern that the Canada goose population at the Duck River Unit has declined

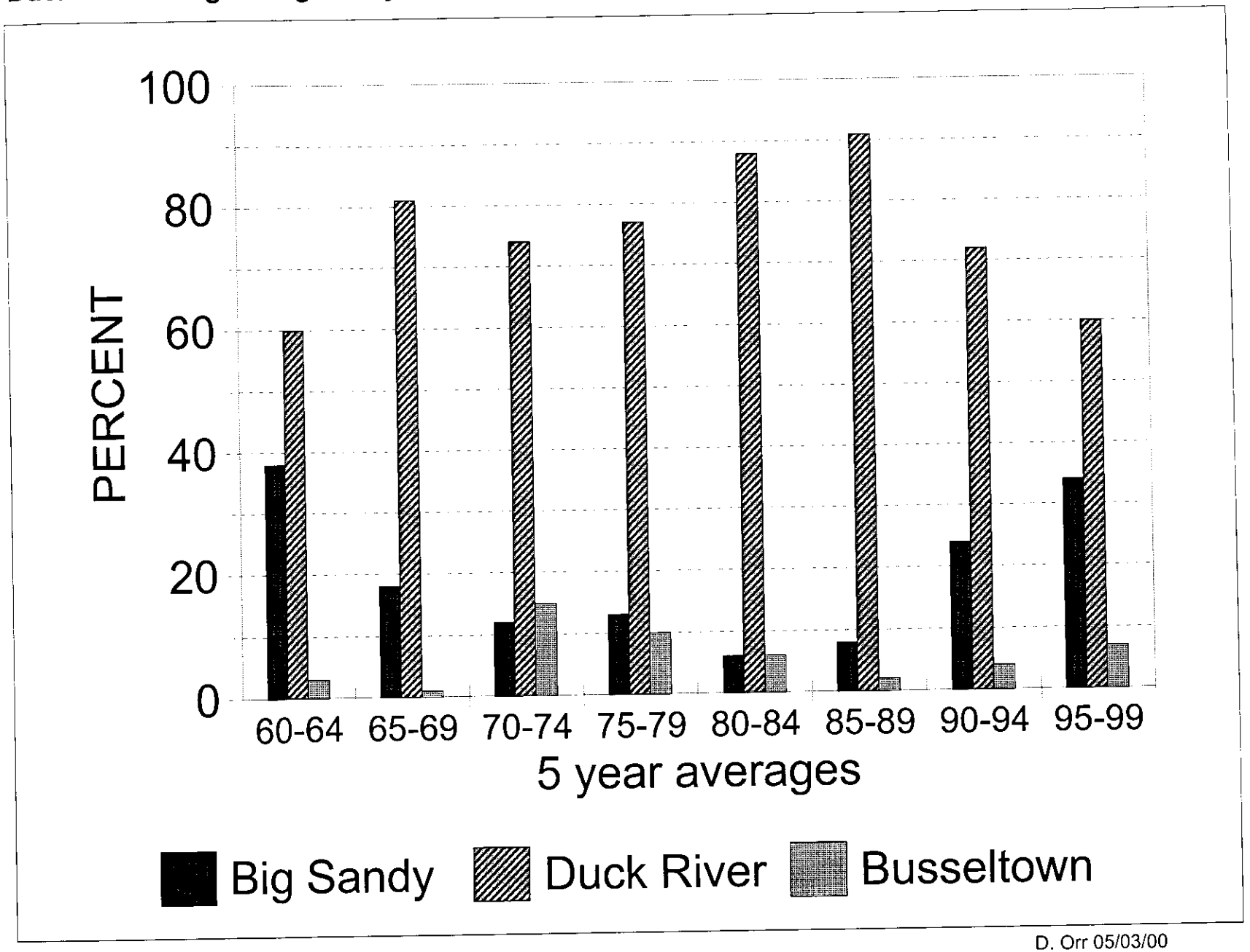
substantially more in both numbers and proportions than the Big Sandy Unit. Maybe this has occurred just because Duck River is farther south which is where the most significant goose declines have occurred, such as Wheeler NWR. Or, have changes in the habitat composition and management on the Duck River Unit not been as favorable to geese as the Big Sandy Unit? Some of the major changes I have observed on the Duck River Unit have been the creation of water management impoundments, increasing the acreage of moist soil plant management, adding about 10 miles of roads on moist soil unit levees which provides an opportunity for increased disturbance, a reduction the amount of force-account farming in the fall, a reduction in the amount of green browse available to geese, manipulation of standing corn??, a substantial increase in less desirable plants such alligator weed and water primrose,. . . . . It might be worthwhile to attempt to identify habitat composition and management changes that have occurred on Duck River versus Big Sandy in an effort to draw subjective conclusions about potential impacts on historic goose populations and to make judgements about best management practices for Canada geese.

Don Orr

attachments

TOTAL DUCKS

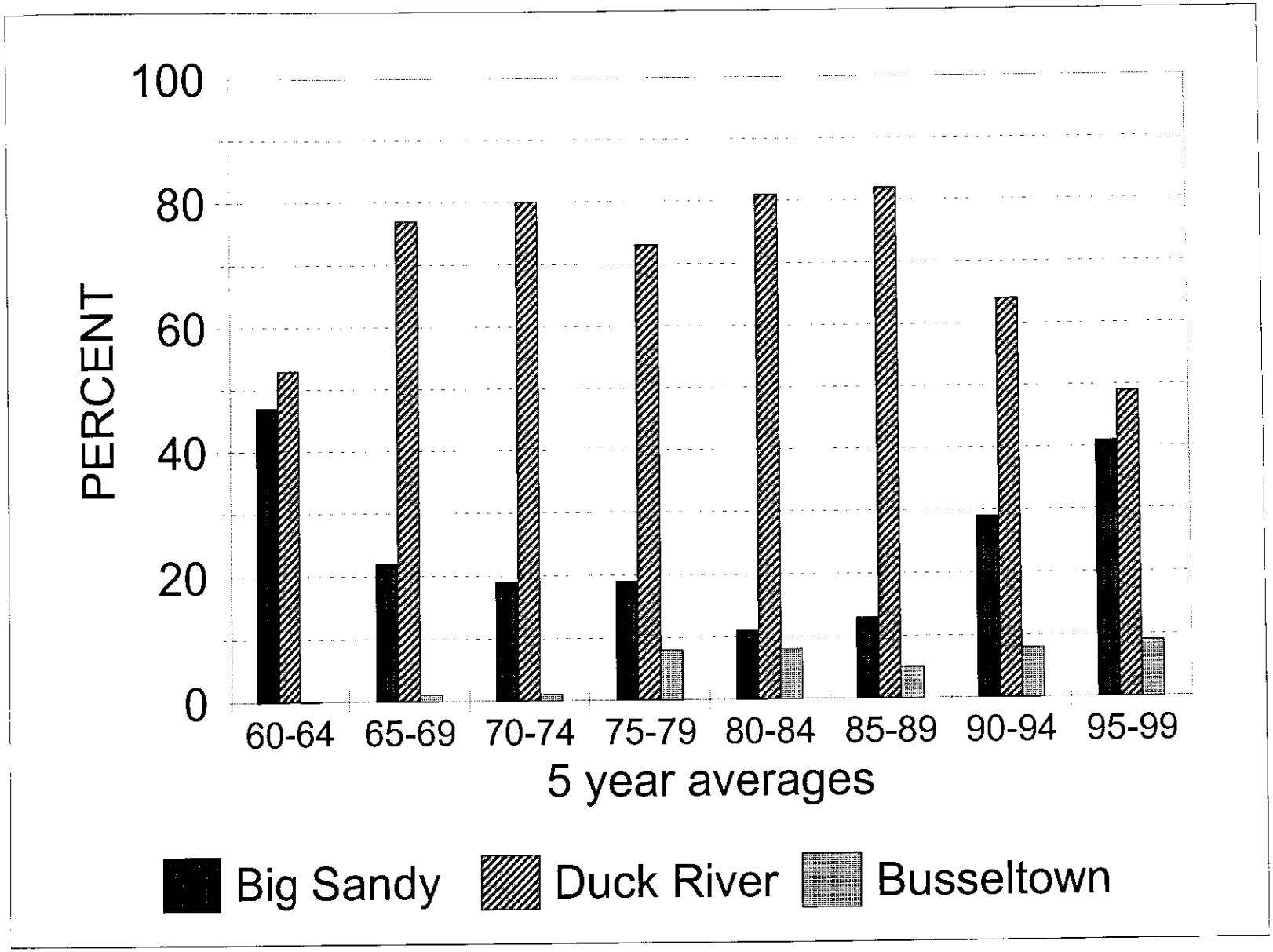
Figure 1. Average Percent of Tennessee National Wildlife Refuge Population of Ducks Occurring on Big Sandy, Duck River and Busseltown Units, 1960-1999



D. Orr 05/03/00

CANADA GEESE

Figure 2. Average Percent of Tennessee National Wildlife Refuge Population of Canada Geese Occurring on Big Sandy, Duck River and Busseltown Units, 1960-1999



D. Orr 05/03/00

TOTAL DUCKS

Table 1. Average Populations* and Percent of Tennessee National Wildlife Refuge Population of Ducks Occurring on Big Sandy, Duck River and Busseltown Units, 1960-1999

Years	Big Sandy		Duck River		Busseltown		Total Refuge	
	Number	%	Number	%	Number	%	Number	%
1960-64	54,000	38	86,000	60	4,000	3	144,000	101
1965-69	37,000	18	166,000	81	2,000	1	205,000	100
1970-74	18,000	12	111,000	74	22,000	15	151,000	101
1975-79	27,000	13	164,000	77	22,000	10	213,000	100
1980-84	7,000	6	112,000	88	8,000	6	127,000	100
1985-89	17,000	8	203,000	91	4,000	2	224,000	101
1990-94**	34,600	24	105,100	72	6,300	4	146,000	100
1995-99	49,100	34	87,100	60	9,500	7	145,700	101

*Population counts are from the winter waterfowl survey which is conducted during the first week in January each year.

**Experimental years were 1990-92

D. Orr 05/03/00

O-check this figure

3A (BS)

80	5900	Rhodes
81	11,200	"
82	4,500	"
83	9,200	"
84	4,200	
	35,000	

3C (BT)

12,700
3,700
15,200
500
6,100
38,200

CANADA GEESE

Table 2. Average Populations* and Percent of Tennessee National Wildlife Refuge Population of Canada Geese Occurring on Big Sandy, Duck River and Busseltown Units, 1960-1999

Years	Big Sandy		Duck River		Busseltown		Total Refuge	
	Number	%	Number	%	Number	%	Number	%
1960-64	7,000	47	8,000	53	0	0	15,000	100
1965-69	7,000	22	24,000	77	200	1	31,200	100
1970-74	5,000	19	21,000	80	300	1	26,300	100
1975-79	9,000	19	35,000	73	4,000	8	48,000	100
1980-84	4,000	11	30,000	81	3,000	8	37,000	100
1985-89	8,000	13	49,000	82	3,000	5	60,000	100
1990-94**	10,100	29	22,300	64	2,700	8	35,100	101
1995-99	3,992	41	4,780	49	914	9	9,686	99

*Population counts are from the winter waterfowl survey which is conducted during the first week in January each year.

**Experimental years were 1990-92

D. Orr 005/03/00